

Ureteric Obstruction by Shotgun Pellet "Pellet Colic"

BANNAKIJ LOJANAPIWAT, M.D.*,
SURITHORN SOONTHORNPUN, M.D. *

SUPON SRIPRALAKIT, M.D.*,
SUPOT WUDHIKARN, M.D.*

Abstract

Acute renal colic from retained missiles is an unusual and interesting delayed complication of missile injuries to the abdomen. It must be considered in patients who present with symptoms of renal colic following gunshot and shotgun wounds with retained missiles. We report a case of acute ureteral obstruction secondary to a migrating intraluminal projectile 3 days after a shotgun wound to the back.

Key word : Ureteric Obstruction, Shotgun Pellet, Pellet Colic

CASE REPORT

A six-year-old boy was admitted for fever and left flank colic pain of two days duration. He denied voiding difficulty, hematuria or change in bowel habits. His past medical history was significant for a shotgun injury to the left back three days prior to this admission. After his injury, he was admitted for observation in another hospital, but he was asymptomatic and no treatment was required. The physical examination was normal, except for the presence of fever (Temp = 38.5°C) and tenderness on the left side of the abdomen and flank. The shotgun wound on the back had healed. The blood chemistry, blood count and urinalysis were within normal limits.

By comparing the plain abdominal radiographic examination obtained during this admission with the one taken when the patient was first injured, we could observe that the pellet was in a more medial and inferior portion of the previous position. Considering the symptoms of acute ureteric obstruction from dislodgment and migration of the pellet into the upper ureter or infected hematoma of left retroperitoneum space, an intravenous urography and CT scan were done and revealed hydronephrosis and hydroureter proximal to the pellet and leakage of contrast media from the posterior aspect of the left kidney. These confirmed the diagnosis of ureteric obstruction from a pellet (Fig. 1, 2).

* Division of Urology, Department of Surgery, Faculty of Medicine, Chiang Mai University, Chiang Mai 50200, Thailand.



Fig. 1. Intravenous urography reveals ureteric obstruction from pellet in the upper ureter.

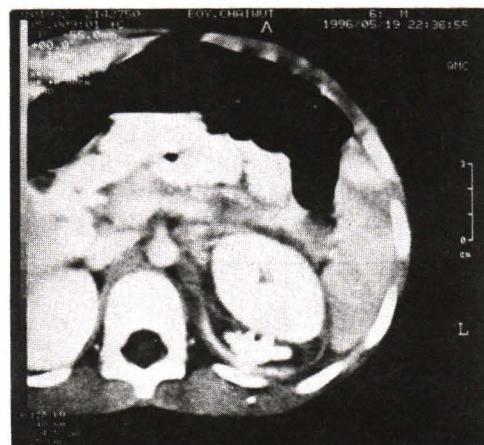


Fig. 2. CT scan reveals leakage of contrast media from posterior aspect of left kidney and some hydronephrosis.

Laparotomy was done. There was a hole at the posterior aspect of the upper pole of the left kidney and one pellet at the left upper ureter about three centimeter below the ureteropelvic junction. There was hydroureter proximal to the pellet. Ureterotomy to remove pellet was done. The patient had an uneventful recovery and was discharged home asymptomatic.

DISCUSSION

After foreign bodies find their way into the renal collecting system, they can migrate into the ureter and cause obstruction or renal colic. Foreign bodies may reach the kidney by several pathways. Ingested objects such as needles or toothpicks may perforate the retroperitoneal portions of the duodenum or colon and then enter the kidney. Objects introduced into the lower urinary tract may migrate up into the kidney. In cases of penetrating trauma, some missiles enter the renal collecting system directly and some erode into the collecting system from the renal parenchyma or perinephric tissues(1-7).

Begg reported the first case in 1947. During World War I, a soldier sustained a frag-

ment wound to the left side. Three fragments were retained within the left kidney. One fragment passed through the urethra 23 years later. In 1955, McClellan reported a case of what he termed "buckshot colic" when he described the case of a 15-year-old boy who sustained a shotgun wound to the abdomen and developed urethral obstruction from a migrating pellet 2 weeks later(1). In the past 12 years, there have been nine cases involving pellets and two involving bullets(1-7).

In over 73 per cent of cases of shotgun wounds, the patients developed symptoms of renal colic within 1 month of injury. The median time from injury to onset of symptoms of ureteral obstruction was 2 weeks and approximately two thirds of the cases involving retained pellets resolved with the spontaneous passage of the pellet. Shotgun pellets range in size from 2 mm to 8 mm(1).

In 1990, Fernandes reported the removal of a BB. pellet through a percutaneous nephrostomy in an 11-year-old boy(4) and Mering described a case of retained air rifle pellet that caused complete ureteral obstruction and required ureterotomy for removal(6).

REFERENCES

1. Fildes JJ, Betlej TM, Barrett JA. Buckshot colic : Case report and review of the literature. *J Trauma* 1995; 39:1181-4.
2. Harrington TG, Kandel LB. Renal colic following a gunshot wound to the abdomen : The birdshot calculus. *J Urol* 1997; 157: 1351-2.
3. Bertini JE, Boileau MA, Fischer RP. Buckshot colic. *Urology* 1984; 23: 167-9.
4. Fernandes ET, Wrenn E, Jerkin G, Noe HN. Late urologic complication of an abdominal gunshot wound. *J Ped Surg* 1990; 25: 1283-4.
5. Gutman H, Rothberg M, Johanson KE. Ureteral obstruction by shotgut pellet seven years after injury. *Urology* 1984; 23: 170-2.
6. Mering JH. Case Profile : Ureteral pellet. *Urology* 1984; 24: 628.
7. Gawande AS, Kinnard PD, Stanley EK. Ureteric colic due to migrating shotgut pellet. *Br J Urol* 1982; 54: 191.

ภาวะท่อไตอุดตันจากกระสุนปืน

บรรณกิจ โลจนาภิวัฒน์ พ.บ.*, ศุภณ ศรีพลาภิจ พ.บ.*
สุริธรรม สุนทรพันธ์ พ.บ.* , สุพจน์ วุฒิการณ์ พ.บ.*

ภาวะท่อไตอุดตันจากกระสุนปืนนั้นพบได้ไม่น้อย และเป็นภาวะซับซ้อนของการบาดเจ็บบริเวณซ้องห้องที่น่าสนใจ ภาวะนี้ควรจะนึกถึงในผู้ป่วยที่มาด้วยอาการปวดแบบ renal colic ตามหลัง ได้รับบาดเจ็บจากกระสุนปืนบริเวณซ้องห้อง ผู้รายงานขอเสนอผู้ป่วยที่มีภาวะท่อไตอุดตันเนื่องจากการเลื่อนของลูกกระสุนจากบริเวณได้ มากบริเวณท่อไตด้านซ้าย 3 วันหลังจากได้รับบาดเจ็บจากการถูกยิงบริเวณด้านหลัง

คำสำคัญ : ภาวะท่อไตอุดตัน, กระสุนปืน, เพลเล็ทโคลิค

* หน่วยคัลยศาสตร์ยุโรปวิทยา, ภาควิชาคัลยศาสตร์, คณะแพทยศาสตร์, มหาวิทยาลัยเชียงใหม่, จ.เชียงใหม่ 50200